

## KING KB2405-1-ECO2S-PLUS

# KING KB ECO2S+ 5KW 240V Electronic Garage Heater Instruction Manual

MODEL: KB2405-1-ECO2S-PLUS

Brand: KING

## 1. Introduction

The KING KB ECO2S+ series unit heater provides efficient and user-friendly heating for various spaces. This model, KB2405-1-ECO2S-PLUS, features a 5KW / 240V power output, 2-stage heating, and an integrated electronic thermostat with a remote control and remote temperature sensor for optimal comfort and energy savings. It is designed for use as primary or supplemental heat sources in warehouses, stores, or large garages.

### Key Features:

- Smart ECO2S+ Energy-Saving Design
- 2-Stage Heating: Automatically uses the lowest wattage needed for heating.
- Includes ECO2S+ Remote Temperature Sensor for precise temperature monitoring.
- Built-In Provision for Optional 24V Remote Thermostat, compatible with NEST and other 24V Wi-Fi thermostats.
- Integrated fan-only and timer modes.
- Spiral steel elements and high CFM for even air distribution and prolonged heater life.
- Universal wall/ceiling bracket for simple installation.

## 2. Important Safety Information

Read all instructions before installing or using this heater. Failure to follow these instructions may result in electric shock, fire, property damage, or personal injury.

- **Electrical Safety:** Installation must be performed by a qualified electrician in accordance with all applicable local, state, and national electrical codes. Ensure the power supply is disconnected before any service or installation.
- **Mounting:** Securely mount the heater using the provided universal bracket to a structural support capable of holding the unit's weight. Maintain proper clearances from combustible materials as specified in the installation section.

- **Operation:** Do not operate the heater with the grill removed. Do not block air inlets or outlets. Keep flammable materials away from the heater.
- **Maintenance:** Disconnect power before cleaning or performing any maintenance.

### 3. Package Contents

Verify that all items are present and undamaged upon opening the package:

- KING KB ECO2S+ Unit Heater (5KW / 240V)
- Universal Wall/Ceiling Mounting Bracket
- Remote Control
- ECO2S+ Remote Temperature Sensor
- Heavy-Duty Pigtail (for electrical connection)
- Installation Hardware (lag bolts, nuts, grommet)
- User Manual



Figure 1: Included components of the KING KB ECO2S+ heater package.

This image displays the main heater unit, a black remote control, a white remote temperature sensor, and a grey universal mounting bracket, all included in the product package.

## 4. Installation

### 4.1 Mounting the Heater

The universal mounting bracket allows for both wall and ceiling installation. Ensure the mounting surface is structurally sound to support the heater's weight (approximately 40 lbs). Use appropriate lag bolts or expansion bolts provided in the hardware pack.

1. Attach the universal bracket to the desired wall or ceiling location using appropriate fasteners.
2. Align the heater unit with the bracket and secure it using the large knobs on the sides, allowing for angle adjustment.
3. Adjust the heater angle to direct airflow as needed. The bracket offers four adjustable positions.



Figure 2: Rear view of the heater, illustrating the fan and mounting points for the bracket.

This image shows the back of the grey heater unit with a protective grill covering the fan. Mounting holes are visible on the sides for attaching the universal bracket.

## 4.2 Electrical Wiring

This heater requires a 240V dedicated circuit. Installation must be performed by a licensed electrician. The 5KW model typically requires a 40-amp breaker and 4-8 AWG copper wire. Ensure all local electrical codes are followed.

1. **Disconnect Power:** Turn off power at the main circuit breaker before beginning any wiring.
2. **Access Wiring Compartment:** Locate and remove the single Phillips screw on the side panel to open the wiring compartment.
3. **Remove Knockout:** Select an appropriate knockout on the side of the heater for your wiring. Use pliers to remove the knockout.
4. **Install Strain Relief:** Insert the provided grommet with integral strain relief into the knockout hole.
5. **Connect Wires:**
  - Connect the black wire to the L1 terminal.
  - Connect the red wire to the L2 terminal.
  - Connect the green (ground) wire to the grounding screw.

Ensure all wires are securely tightened and that no insulation is under the terminals.

6. **Secure Wiring:** Tighten the strain relief to prevent the wire from pulling out and to protect the wiring from damage.
7. **Close Compartment:** Reattach the access panel with the Phillips screw.
8. **Restore Power:** Turn on power at the main circuit breaker.



Figure 3: Internal wiring connections for the heater.

This image shows the internal wiring compartment of the heater with various colored wires connected to terminals (L1, L2, and ground) and a circuit board. A label indicates "Red Wire L2" and "Black Wire L1" for 240V, 4-8AWG connections.

Your browser does not support the video tag.

Video 1: This video demonstrates the electrical wiring process for the KING KB ECO2S+ heater, showing how to connect the power cable to the internal terminals and secure it with a strain relief. It also highlights the 2-stage heating feature and remote temperature sensing.

### 4.3 External Thermostat Switch

On the back of the heater, there is a toggle switch to select between the built-in thermostat (setting I) and an external thermostat (setting II). For most applications using the integrated controls, ensure the switch is set to 'I'. If connecting to an external 24V thermostat (e.g., Nest), set the switch to 'II' and ensure proper wiring by a licensed electrician.



## 5. Operating Instructions

### 5.1 Initial Power-Up

Upon initial power-up, the unit will beep, and the display will show the current room temperature. This indicates correct voltage and power supply.

### 5.2 Control Panel and Remote Control

The heater can be operated via the integrated control panel or the included remote control. The remote control offers convenient access to all functions from a distance.



Figure 4: Front view of the heater with the control panel visible.

This image shows the front of the grey heater unit with horizontal louvers and a digital control panel at the bottom. The control panel has buttons for Power, Mode, Start/Stop, and Up/Down arrows, along with a digital temperature display.

### 5.3 Operating Modes

Press the 'Mode' button to cycle through the available operating modes:

- **Low Heat:** Provides a lower heat output.
- **Eco Mode:** Automatically adjusts wattage to the lowest level needed to maintain the set temperature, optimizing energy efficiency.

- **Fan Only:** Circulates air without heating, useful for summer or general ventilation.
- **High Heat:** Provides maximum heat output.

### 5.4 Temperature Setting

Use the Up/Down arrow buttons on the control panel or remote to set your desired temperature. The heater will maintain this temperature automatically.

### 5.5 Timer Function

The timer mode allows you to set the heater to run for a predetermined length of time, after which it will automatically shut off. This feature helps conserve energy and provides convenience.

## 6. Maintenance

Regular maintenance ensures optimal performance and longevity of your heater. Always disconnect power before performing any maintenance.

- **Cleaning:** Periodically clean the exterior of the heater with a soft, damp cloth. Ensure the air inlets and outlets are free from dust and debris. Do not use abrasive cleaners or solvents.
- **Inspections:** Annually inspect electrical connections for tightness and signs of wear. Check the mounting bracket for security.
- **Fan:** Ensure the fan operates smoothly and is free from obstructions.

## 7. Troubleshooting





If your heater is not functioning correctly, refer to the following common issues and solutions:

Problem	Possible Cause	Solution
Heater does not turn on / No display.	No power to the unit or incorrect voltage.	Check circuit breaker. Ensure 240V power is supplied. Verify wiring connections are secure.
Heater is on but not producing heat.	Thermostat switch set to external, or external thermostat not calling for heat.	Ensure the external thermostat switch on the back of the unit is set to 'I' for internal thermostat control. If using an external thermostat, check its settings.
Insufficient heating.	Incorrect mode selected, or obstructions.	Select 'High Heat' mode. Ensure air inlets/outlets are clear. Check louvers are directed appropriately.
Remote control not working.	Dead batteries or obstruction.	Replace remote control batteries. Ensure no obstructions between remote and heater.

## 8. Specifications

- **Brand:** KING
- **Model:** KB2405-1-ECO2S-PLUS
- **Power Output:** 5KW

- **Voltage:** 240V
- **Amperage:** 20.8 Amps
- **Number of Speeds:** 2 (Low, High)
- **Fuel Type:** Electric
- **Special Features:** Energy Efficient, Remote Control, Remote Temperature Sensor, 2-Stage Heating
- **Color:** Black
- **Form Factor:** Cabinet
- **Indoor/Outdoor Usage:** Indoor
- **Mounting Type:** Wall Mount (Universal bracket included)
- **Product Dimensions:** 16.5 x 15 x 13.5 inches
- **Item Weight:** 40 pounds
- **UPC:** 093319332399
- **First Available:** September 29, 2020

5,000 Watts 208/240 Volts Model # KB2405-1-B2-ECO	7,500 Watts 208/240 Volts Model # KB2407-1-B2-ECO	10,000 Watts 208/240 Volts Model # KB2410-1-B2-ECO	12,500 Watts 208/240 Volts Model # KB2412-1-B2-ECO	15,000 Watts 208/240 Volts Model # KB2415-1-B2-ECO
				
1 Car Garage	2 Car Garage	3 Car Garage	4 Car Garage	
Heats Up to 450 *Sq. Ft. 17,000 BTU 400 CFM 21 Amps	Heats Up to 700 *Sq. Ft. 25,600 BTU 600 CFM 32 Amps	Heats Up to 900 *Sq. Ft. 34,100 BTU 725 CFM 42 Amps	Heats Up to 1,200 *Sq. Ft. 42,650 BTU 825 CFM 53 Amps	Heats Up to 1,500 *Sq. Ft. 51,200 BTU 925 CFM 63 Amps

\*Square footage is calculated at 10 watts per square foot, based on insulated walls (4" R-11 or R-13) and 8 foot insulated ceiling (4" R-11 or R-13).

Figure 5: Recommended wattage for various garage sizes.

This chart provides guidance on selecting the appropriate heater wattage based on garage size (1-car to 4-car garages), square footage, BTU, CFM, and amperage. The 5KW model is suitable for 1-car garages up to 450 sq. ft.

## 9. Warranty and Support

For specific warranty details, please refer to the documentation included with your product or contact KING customer support. General product protection plans may be available for purchase separately.

- **Returns:** This product typically offers a 30-day easy return policy.
- **Protection Plans:** Optional 4-Year Protection Plans and Complete Protect monthly plans may be available for extended coverage.
- **Customer Support:** For technical assistance or service inquiries, please visit the KING store on Amazon or refer to the contact information provided in your product packaging.

Visit the official KING Store for more information: [KING Store](#)